CT/ SE97 / 01091

10 -07- 1998

Claims

1. Protein or polypeptide having fibrinogen binding activity, **characterized** in that said protein or polypeptide originates from a strain among recognized ~~coagulase-negative staphylococci~~ Staphylococcus epidermidis.

2. Recombinant DNA molecule containing a nucleotide sequence coding for a protein or polypeptide having fibrinogen binding activity, **characterized** in that said protein or polypeptide originates from a ~~coagulase-negative~~ staphylococcal epidermidis strain.

3. Plasmid, phage or phagemid containing a nucleotide sequence coding for a protein or polypeptide having fibrinogen binding activity, **characterized** in that said protein or polypeptide originates from a coagulase-negative staphylococcal epidermidis strain.

4. Micro-organism containing at least one recombinant DNA molecule according to claim 2.

5. Micro-organism containing at least one plasmid, phage or phagemid according to claim 3.

6. Method for producing a fibrinogen binding protein or a polypeptide thereof, **characterized** in that

- at least one recombinant DNA molecule according to claim 2 is introduced in a micro-organism,
- said micro-organism is cultured in a suitable medium,
- the protein thus formed is isolated by chromatographic purification.

7. Method for producing a fibrinogen binding protein or polypeptide thereof, **characterized** in that

- at least one recombinant protein according to claim 2 is expressed on a phage particle,
- said phage particle shows fibrinogen binding activity.

8. Recombinant DNA molecule according to claim 2, characterized in that said DNA molecule contains one or more of the following nucleotide sequences:

```
1     TCTAGTGATGAAGAAAAGAATGATGTGATCAATAATAATCAGTCAATAAA
51    CACCGACGATAATAACCAAATAATTAAAAAAGAAGAAACGAATAACTACG
101   ATGGCATAGAAAAACGCTCAGAAGATAGAACAGAGTCAACAACAAATGTA
151   GATGAAAACGAAGCAACATTTTTACAAAAGACCCCTCAAGATAATACTCA
201   TCTTACAGAAGAAGAGGTAAAAGAATCCTCATCAGTCGAATCCTCAAATT
251   CATCAATTGATACTGCCCAACAACCATCTCACACAACAATAAATAGAGAA
301   GAATCTGTTCAAACAAGTGATAATGTAGAAGATTCACACGTATCAGATTT
351   TGCTAACTCTAAAATAAAAGAGAGTAACACTGAATCTGGTAAAGAAGAGA
401   ATACTATAGAGCAACCTAATAAAGTAAAAGAAGATTCAACAACAAGTCAG
451   CCGTCTGGCTATACAAATATAGATGAAAAAATTTCAAATCAAGATGAGTT
501   ATTAAATTTACCAATAAATGAATATGAAAATAAGGCTAGACCATTATCTA
551   CAACATCTGCCCAACCATCGATTAAACGTGTAACCGTAAATCAATTAGCG
601   GCGGAACAAGGTTCGAATGTTAACCATTTAATTAAAGTTACTGATCAAAG
651   TATTACTGAAGGATATGATGATAGTGAAGGTGTTATTAAAGCACATGATG
701   CTGAAAACTTAATCTATGATGTAACTTTTGAAGTAGATGATAAGGTGAAA
751   TCTGGTGATACGATGACAGTGGATATAGATAAGAATACAGTTCCATCAGA
801   TTTAACCGATAGCTTTACAATACCAAAAATAAAAGATAATTCTGGAGAAA
851   TCATCGCTACAGGTACTTATGATAACAAAAATAAACAAATCACCTATACT
901   TTTACAGATTATGTAGATAAGTATGAAAATATTAAAGCACACCTTAAATT
951   AACGTCATACATTGATAAATCAAAGGTTCCAAATAATAATACCAAGTTAG
1001  ATGTAGAATATAAAACGGCCCTTTCATCAGTAAATAAAACAATTACGGTT
1051  GAATATCAAAGACCTAACGAAAATCGGACTGCTAACCTTCAAAGTATGTT
1101  TACAAATATAGATACGAAAAATCATACAGTTGAGCAAACGATTTATATTA
1151  ACCCTCTTCGTTATTCAGCCAAGGAAACAAATGTAAATATTTCAGGGAAT
1201  GGTGATGAAGGTTCAACAATTATAGACGATAGCACAATAATTAAAGTTTA
1251  TAAGGTTGGAGATAATCAAAATTTACCAGATAGTAACAGAATTTATGATT
1301  ACAGTGAATATGAAGATGTCACAAATGATGATTATGCCCAATTAGGAAAT
1351  AATAATGATGTGAATATTAATTTTGGTAATATAGATTCACCATATATTAT
1401  TAAAGTTATTAGTAAATATGACCCTAATAAGGATGATTACACGACTATAC
1451  AGCAAACTGTGACAATGCAGACGACTATAAATGAGTATACTGGTGAGTTT
1501  AGAACAGCATCCTATGATAATACAATTGCTTTCTCTACAAGTTCAGGTCA
1551  AGGACAAGGTGACTTGCCTCCTGAAAAAACTTATAAAATCGGAGATTACG
1601  TATGGGAAGATGTAGATAAAGATGGTATTCAAAATACAAATGATAATGAA
1651  AAACCGCTTAGTAATGTATTGGTAACTTTGACGTATCCTGATGGAACTTC
1701  AAAATCAGTCAGAACAGATGAAGATGGGAAATATCAATTTGATG
```

or homologues thereof.

9. Recombinant DNA molecule according to claim 2, **characterized** in that said DNA molecule encodes one or more of the following amino acid sequences:

```
1    SSDEEKNDVINNNQSINTDDNNQIIKKEET
31   NNYDGIEKRSEDRTESTTNVDENEATFLQK
61   TPQDNTHLTEEEVKESSSVESSNSSIDTAQ
91   QPSHTTINREESVQTSDNVEDSHVSDFANS
121  KIKESNTESGKEENTIEQPNKVKEDSTTSQ
151  PSGYTNIDEKISNQDELLNLPINEYENKAR
181  PLSTTSAQPSIKRVTVNQLAAEQGSNVNHL
211  IKVTDQSITEGYDDSEGVIKAHDAENLIYD
241  VTFEVDDKVKSGDTMTVDIDKNTVPSDLTD
271  SFTIPKIKDNSGEIIATGTYDNKNKQITYT
301  FTDYVDKYENIKAHLKLTSYIDKSKVPNNN
331  TKLDVEYKTALSSVNKTITVEYQRPNENRT
361  ANLQSMFTNIDTKNHTVEQTIYINPLRYSA
391  KETNVNISGNGDEGSTIIDDSTIIKVYKVG
421  DNQNLPDSNRIYDYSEYEDVTNDDYAQLGN
451  NNDVNINFGNIDSPYIIKVISKYDPNKDDY
481  TTIQQTVTMQTTINEYTGEFRTASYDNTIA
511  FSTSSGQGQGDLPPEKTYKIGDYVWEDVDK
541  DGIQNTNDNEKPLSNVLVTLTYPDGTSKSV
571  RTDEDGKYQFD*
```

10. Plasmid, phage or phagemid containing one or more nucleotide sequences according to claim 8 or homologues thereof.

11. Micro-organism containing at least one plasmid, phage or phagemid according to claim 9.

12. The use of an extractable fraction of staphylococci to block the adherence of staphylococci to surfaces with immobilised fibrinogen.

13. The use of the native fibrinogen binding protein or parts thereof from staphylococci to block the adherence of staphylococci to surfaces with immobilised fibrinogen.

14. The use of a protein according to claim 1 or parts thereof to block the adherence of staphylococci to surfaces.

15. The use of an immobilised protein according to claim 1 or fragments thereof to isolate or detect fibrinogen in solutions.

16. The use of a gene encoding a protein according to claim 1 or parts thereof for diagnostic purposes, e.g. to detect the presence of *S. epidermidis* and/or determine the type of organism present in a sample.

17. Antibodies raised against a protein according to claim 1 or against a peptide, encoded

by the DNA sequence according to claim 8.

18. The use of antibodies according to claim 17 for diagnostic purposes.

19. The use of antibodies according to claim 17 for therapeutic and prophylactic purposes.

20. The use of antibodies against the extractable fraction of staphylococci to block the adherence of staphylococci.

21. The use of antibodies against the native fibrinogen binding protein from staphylococci to block the adherence of staphylococci.

22. The use of antibodies against a protein according to claim 1 or parts thereof to block the adherence of staphylococci.

23. The use of a fibrinogen binding protein or parts thereof from staphylococci as an immunogen.

24. The use of a protein according to claim 1 or parts thereof as an immunogen.

25. Vaccine composition including a protein according to claim 1.

26. Vaccine composition including a DNA sequence according to claim 8.

27. Method of active immunisation including the administration of a protein according to claim 1 to a mammal.

28. Method of active immunisation including the administration of a DNA sequence according to claim 8, to a mammal.

29. Method of passive immunisation including the administration of antibodies, raised against a protein according to claim 1 or against a peptide, encoded by a DNA sequence ~~according to claim 8,~~ to a mammal.

---

add 48